LISTING OF CLAIMS

1. (currently amended) A vacuum exhaust apparatus for exhausting gas from at least two process vacuum chambers, comprising:

a sub-atmospheric chamber having at least two inlets and an outlet and having a sub-atmospheric abatement device for conditioning exhaust;

a plurality of high-vacuum pumps, each said high-vacuum pump connected on an exhaust side to one of the inlets of the sub-atmospheric chamber, each said high-vacuum pump being connected on a vacuum side to one of the process vacuum chambers for controlling vacuum within that chamber; and

a backing pump connected to the outlet of the sub-atmospheric chamber, for maintaining vacuum within that chamber.

2. (cancelled)

3. (currently amended) The vacuum exhaust apparatus of claim ~~2~~1, wherein the sub-atmospheric abatement device is a scrubber.

4. (currently amended) The vacuum exhaust apparatus of claim ~~2~~1, wherein the sub-atmospheric abatement device is a plasma device.

5. (original) The vacuum exhaust apparatus of claim 1, wherein the sub-atmospheric chamber is proximate the process chambers.

6. (original) The vacuum exhaust apparatus of claim 1, wherein the sub-atmospheric chamber is remote from the process chambers.

7. (original) The vacuum exhaust apparatus of claim 1, wherein an internal volume of the sub-atmospheric chamber reduces an effect of pressure changes in one of the process chambers on pressure in another of the process chambers.

8. (original) The vacuum exhaust apparatus of claim 1, wherein the high-vacuum pumps are turbo pumps.

9. (original) The vacuum exhaust apparatus of claim 1, wherein the high-vacuum pumps are turbo pumps capable of exhausting to a pressure of over 1 torr.

10. (original) The vacuum exhaust apparatus of claim 1, wherein the high-vacuum pumps are turbo pumps capable of exhausting to a pressure of over 5 torr.

11. (original) The vacuum exhaust apparatus of claim 1, further comprising throttle valves connected to exhaust sides of the high-vacuum pumps.

12. (original) The vacuum exhaust apparatus of claim 11, wherein the high-vacuum pumps are turbo pumps.

13. (original) The vacuum exhaust apparatus of claim 1, wherein the backing pump is proximate the sub-atmospheric chamber.

14. (original) The vacuum exhaust apparatus of claim 1, further comprising an atmospheric abatement device connected to an exhaust side of the backing pump.

15. (original) The vacuum exhaust apparatus of claim 14, wherein the atmospheric abatement device is a device selected from the group consisting of a wet scrubber, a dry scrubber and a combination dry/wet scrubber.

16. (original) The vacuum exhaust apparatus of claim 1, comprising four process vacuum chambers and four high-vacuum pumps.

17. (original) A semiconductor manufacturing system, comprising:
a plurality of semiconductor vacuum processing chambers;

a plurality of pressure control units, each said pressure control unit connected to one processing chamber for evacuating said chamber;

a single sub-atmospheric abatement chamber connected to exhaust sides of each of said pressure control units, whereby all of said pressure control units exhaust into the single sub-atmospheric abatement chamber;

abatement means in the sub-atmospheric abatement chamber for conditioning exhaust in the sub-atmospheric abatement chamber;

a single backing pump connected to the sub-atmospheric abatement chamber for maintaining sub-atmospheric pressure in the sub-atmospheric abatement chamber; and

an atmospheric abatement chamber connected to an exhaust of the backing pump.

18. (original) The semiconductor manufacturing system of claim 17, wherein said pressure control unit comprises a turbo pump connected for evacuating the one processing chamber, and a throttle valve connected to an exhaust side of the turbo pump.

19. (original) The semiconductor manufacturing system of claim 17, wherein the abatement means in the sub-atmospheric abatement chamber is a plasma device.

20. (original) The semiconductor manufacturing system of claim 17, wherein each of the plurality of pressure control units is connected directly to the sub-atmospheric abatement chamber.

21. (original) The semiconductor manufacturing system of claim 17, wherein each of the plurality of pressure control units is connected remotely to the sub-atmospheric abatement chamber.

22. (original) The semiconductor manufacturing system of claim 17, wherein each of the vacuum processing chambers is located within a clean room, and the sub-atmospheric abatement chamber is located outside the clean room.

23. (currently amended) The ~~vacuum exhaust apparatus~~ semiconductor manufacturing system of

claim 17, wherein an internal volume of the sub-atmospheric chamber reduces an effect of pressure changes in one of the processing chambers on pressure in another of the processing chambers.

24. (original) A method for exhausting gas from a plurality of process vacuum chambers to achieve a process vacuum pressure, the method comprising the steps of:

evacuating to an intermediate vacuum pressure greater than the process vacuum pressure, the process vacuum chambers and a sub-atmospheric abatement chamber, using a backing pump connected to an outlet of the abatement chamber;

independently evacuating to the process vacuum pressure each of the process vacuum chambers using a plurality of high-vacuum pumps, each of said high-vacuum pumps being connected for evacuating one of the process vacuum chambers;

each of said high-vacuum pumps further being connected for exhausting into inlets of said sub-atmospheric abatement chamber; and

conditioning exhaust in the sub-atmospheric abatement chamber using an abatement device.

25. (original) The method of claim 24, further comprising the step of independently controlling a pressure in each said process vacuum chamber using a corresponding high-vacuum pump and a corresponding throttle valve at an exhaust side of each high-vacuum pump.

26. (original) The method of claim 24, wherein the intermediate vacuum pressure is between 5 and 10 torr.